

**REMARKS**

Applicants note that previously misnumbered claims 8-14 were renumbered as claims 9-15 by the Examiner. Renumbered claims 9-12 and 14-15 are currently pending in the present application after cancellation of renumbered claim 13. In order to reflect the renumbering of the claims, Applicants have amended renumbered claims 9-12 and 14-15 to adjust the dependencies.

**§ 112, Second Paragraph, Rejection**

Claims 13 and 15 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to the Examiner's observation that the phrase "n radar sensors transmitting simultaneously, without interruption" recited in claim 13 is indefinite, Applicants do not agree with the Examiner's assertions. However, in order to expedite prosecution of the present application, Applicants have deleted claim 13.

In response to the Examiner's contention that the limitations of claim 15 are internally contradictory, Applicants have amended claim 15 to clarify that "each radar sensor has a plurality of receivers," i.e., the simultaneous evaluation occurs on a plurality of receiver units of a radar sensor, rather than on a plurality of receiving sensors as interpreted by the Office Action. Accordingly, it is respectfully submitted that claim 15 is definite.

**Claims 9, 10, 14 and 15**

Claims 9, 10, 14 and 15 were rejected under 35 U.S.C. 103(a) as unpatentable over U.S. Patent No. 6,166,995 to Hoenes ("Hoenes"), in view of "A novel ultrasonic sensing system for autonomous mobile systems, Bank, D. ("Bank"); Sensors Journal, IEEE, Volume 2, Issue 6, Dec. 2002 pages 597 to 606. Applicants submit that the rejection should be withdrawn for at least the following reasons.

In order for a claim to be rejected for obviousness under 35 U.S.C. § 103(a), the prior art must teach or suggest each element of the claim. See Northern Telecom, Inc. v. Datapoint Corp., 908 F.2d 931, 934 (Fed. Cir. 1990), cert. denied, 111 S. Ct. 296 (1990); In re Bond, 910 F.2d 831, 834 (Fed. Cir. 1990). To establish a *prima facie* case of obviousness, the

Examiner must show, *inter alia*, that there is some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify or combine the references, and that, when so modified or combined, the prior art teaches or suggests all of the claim limitations. M.P.E.P. §2143. In addition, as clearly indicated by the Supreme Court, it is “important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements” in the manner claimed. See KSR Int’l Co. v. Teleflex, Inc., 127 S. Ct. 1727 (2007).

Amended claim 9 recites, in relevant parts, “a plurality of sensors, each sensor including a transmitter and a receiver for signals, wherein: . . . each of the sensors **receives and analyzes self-echo signals and cross echo signals only for specific intervals relating to a time delay of a reception signal in relation to a transmission signal of its own.**” In support of the rejection, the Examiner contends that “Bank discloses each of the sensors receiving and analyzing of self-echo and cross echo signals only for specific intervals relating to a time delay of a reception signal in relation to a transmission signal of its own,” (citing p. 600, col. 2 of Bank), and that it would have been obvious to modify Hoenes with the teachings of Bank. However, p. 600, col. 2 of Bank simply does not teach or suggest “a plurality of sensors, each sensor including a transmitter and a receiver for signals, wherein: . . . each of the sensors receives and analyzes self-echo signals and cross echo signals only for specific intervals relating to a time delay of a reception signal in relation to a transmission signal of its own.” In this regard, the Examiner asserts that “specifically defined measurement period of 12ms” mentioned in Bank is equivalent to the claimed “time delay of a reception signal in relation to a transmission signal of its own.” (Office Action, p. 5). However, the cited section of Bank clearly indicates that “distance detection range of about 2m . . . corresponds to a TOF of about 12ms,” i.e., 12ms is the time of flight corresponding to a distance of about 2m. This time is used in conjunction with, among other things, basic measurement cycle time, cumulative measurement cycle time, and data transferring time in order to determine the overall system cycle time. (*Bank*, p. 600, Col. 2, lines 4 to 13). However, the time of flight corresponding to a distance of the detection range does not suggest receiving and analyzing “self-echo signals and cross echo signals only for specific intervals relating to a time delay of a reception signal in relation to a transmission signal of its own,” as recited in claim 9.

For at least the foregoing reasons, claim 9 and its dependent claims 10, 14 and 15 are allowable over Hoenes and Bank.

**Claims 11-13**

Claims 11-13 was rejected under 35 U.S.C. 103(a) as unpatentable over Hoenes in view of Bank, and further in view of Jorg and Berg ("Mobile Robot Sonar Sensing with Pseudo-random Codes"; hereinafter "Jorg and Berg"). Claim 13 has been canceled.

Claims 11-12 ultimately depend on claim 9. As noted above, Hoenes and Bank do not render parent claim 9 obvious. Furthermore, "Jorg and Berg" reference does not remedy the deficiencies of Hoenes and Bank as applied against parent claim 9. Therefore, dependent claims 11-12 are allowable over the applied references.

**CONCLUSION**

In view of the foregoing, it is respectfully submitted that all of the pending claims are allowable. Prompt reconsideration and allowance of the present application are therefore respectfully requested.

Respectfully submitted,

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